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2. That I am well acquainted with the German and English languages.
3. That the attached is, to the best of my knowledge and belief, a true translation into the English language of the specification in German filed with the application for a patent in the U.S.A. on
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4. That I believe that all statements made herein of my own knowledge are true and that all statements made on information and belief are true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the patent application in the United States of America or any patent issuing thereon.

For and on behalf of RWS Group plc

The 10th day of October 2003

Huckfeldt & Thorlichen GmbH & Co.

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**Encasing netting for sausage and method for producing
it**

It is known to surround sausage with an encasing netting. This is originally intended to relieve the sausage casing of the filling pressure. It nowadays assumes more and more a decorative character. It is therefore used not only for types of sausage which lose water in a ripening process and from which it can therefore easily be removed later, but also for fresh sausage. When, in the latter case, the encasing netting is cut lengthways so that it can be removed, the sausage surface is also unavoidably cut into, this being undesirable. It is known, admittedly, to provide stitched sausage casings with a tear-open thread within the seam (DE-U-78 07 929, DE-A-37 25 263). However, encasing nettings are tied or knitted seamlessly as a tube, so that a longitudinal seam, into which a tear-open thread could be inserted, is not available there. They are also produced continuously, and therefore the tear-open thread is bound over its entire length into the encasing netting and there is no projecting end at which it could be grasped.

The object on which the invention is based is to make it easier to open the encasing netting. The solution according to the invention is to provide it with a tear-open thread, the length of which is greater than that of the encasing netting in the state of use. The tear-open thread thereby forms at least one loop which can be grasped from outside in order to initiate the tearing-open operation.

Expediently, the netting has a structure extendible in the longitudinal direction, and it has a greater length in the production state than in the state of use. The tear-open thread is then bound in with a length which
5 corresponds to the length of the netting during production. When the netting is thereafter reduced to the length of use, the tear-open thread forms loops wherever it is not retained by the netting, that is to say in the open netting honeycombs. It can be grasped
10 there. The result can therefore be described by stating that, in the state of use of the encasing netting, that is to say, in particular, on the filled sausage, the tear-open thread forms at least one loop, preferably a multiplicity of loops, which are accessible from
15 outside and which can be grasped for tearing open.

It is conceivable, admittedly, simply to stitch the tear-open thread to the encasing netting on the inside. However, since, as a rule, the encasing netting strands
20 are relatively thick, it is very difficult, with a tear-open thread placed in this way, to exert a sufficient tearing-open action on the strands of the casing netting. According to an important feature of the invention, therefore, there is provision for the
25 honeycomb strands of the netting to be composed of knitting stitches and for the tear-open thread to be bound into these by knitting. This means that the tear-open thread does not have to sever the entire thickness of the netting strand, but only part of the netting strand, to be precise only that thread or those
30 threads which are placed outside the tear-open thread in the netting strand. This is preferably only a single thread, that is to say only a small part of the total strand cross section. As soon as it is torn through
35 under the action of the tear-open thread, the stitch belonging to it comes loose, with the result that the strand is severed.

This effect is easily achieved when the honeycomb strands of the encasing netting, through which the tear-open thread is led, are designed in knitting terms as the fringe of a double-rib or warp-knit fabric. In
5 this case, the tear-open thread may lie between a pair of stitch legs and a sinker thread which stretches from a stitch foot of one stitch to the stitch foot of the next stitch. The tear-open thread can thus be bound in particularly easily. Moreover, what can be achieved
10 particularly easily in this way is that only one thread lies outside the tear-open thread, to be precise the sinker thread. If, during production, the latter initially lies within the double-ribbed or warp-knitted netting tube, the netting tube is reversed after
15 production.

So that tearing open is not made more difficult due to the fact that a plurality of successive netting strands containing the tear-open thread slip along the
20 tear-open thread and gather together, it may be expedient to secure them. This may be carried out, for example, by adhesively bonding them to the sausage casing and/or the tear-open thread.

25 For the sake of easier processability, the encasing netting is expediently firmly connected, for example adhesively bonded, to the associated sausage casing. If the sausage casing is a woven or knitted fabric impregnated with collagen, adhesive bonding may take
30 place simultaneously with the application of the collagen and by means of the collagen. If the encasing netting is applied only after the solidification of the collagen or if other sausage casings are used, for example those consisting of cellulose or synthetic
35 material, adhesive bonding takes place in another way with the addition of a suitable adhesive.

When the sausage casing is being filled, the connection between the encasing netting and the sausage casing may

be exposed to high frictional forces which act mainly in the longitudinal direction. This affects, in particular, the connection between the transversely running strands of the encasing netting and the sausage casing. It may therefore be expedient to ensure that, in addition to such transversely running netting strands, there are also those which run in a longitudinal direction, and that mainly these are used for adhesively bonding the encasing netting to the sausage casing. Adhesive bonding may even be restricted to these netting strands running in the longitudinal direction or, with regard to these, be at least more secure or more frequent or over a larger area than in the region of the transversely running netting stands.

In the finished product, on which the encasing netting is closed at the ends, generally together with the sausage casing, according to the invention the tear-open thread is likewise to be secured in the end closures, so that, during tearing open, it cannot be pulled out under the force acting on it.

The invention relates primarily to sausage and similar foodstuffs which are packaged in an encasing tube having end closures. However, it is not restricted to these.

The invention is explained in more detail below with reference to the drawing which illustrates an advantageous exemplary embodiment and in which:

- fig. 1 shows an overall view of a sausage provided with an encasing netting and with a tear-open thread,
- fig. 2 shows an enlarged part view of the encasing netting with tear-open thread,

figs. 3 and 4 show various stitch patterns of a netting strand with tear-open thread, and

5 fig. 5 shows the tearing-open operation.

The sausage according to fig. 1 is contained in a sausage casing which is sealingly surrounded on the outside by an encasing netting 1. The sausage casing 10 and the netting 1 are closed together at the ends, for example by means of clips 2. A tear-open thread 3, which is provided to run continuously lengthways in the encasing netting 1, is also bound into the clips in a tension-resistant manner.

15 The encasing netting 1 consists of honeycombs 4 which are formed by longitudinal strands 5 and transverse strands 6. It is preferably a double-rib or warp-knit fabric which is produced as a tube and in which the 20 transversely running strands 6 are knitted as a fringe (aerated stitches) and the longitudinally running strands 5 are knitted as a tricot. The longitudinally running strands 5 expediently comprise a plurality of (for example, 5) stitches, so that they have some 25 longitudinal extension and thereby make sufficient area available for an adhesive connection to the sausage casing lying beneath. The transversely running strands 6 may have a single-stitch design (fig. 3) or else a multistitch design (fig. 4, three-stitch). In any 30 event, the tear-open thread 3 expediently lies between the sinker thread 8, which runs through from the foot 9 of one stitch to the head 10 of the next stitch, on the one hand, and the legs 11 of a stitch, on the other hand. In this case, the sinker thread 8 is to lie on 35 the outside of the fabric, so that it alone needs to be torn by the tear-open thread 3. The associated stitch as a whole subsequently comes loose.

- If the tear-open thread 3 is led through all the transverse strands lying in a row one behind the other, the encasing netting is thereby torn open as a whole and can easily be removed from the sausage. The latter
5 can thereafter easily be skinned in the usual way. The tearing-open operation is made easier when the tear-open thread is adhesively bonded or otherwise connected to the stitches receiving it, in such a way that no stitch can slide along the tear-open thread and
10 be gathered together with the next stitch. The same aim is achieved by means of the slide-resistant connection of the stitch or of the strand containing it to the sausage casing.
- 15 Although the tear-open thread 3 is expediently led through stitches of the transversely running strands, it may, instead, also be led through a longitudinally running honeycomb strand 5. This applies particularly when the latter contains only one or few stitches.
- 20 The encasing netting is produced in the longitudinally stretched state. The transverse strands 6 receiving the tear-open thread and running with a considerable transverse component in the state of use (fig. 2) are
25 then oriented more or less in the longitudinal direction. The stitches, receiving the tear-open thread 3, of successive transverse strands are then further away from one another than in the state of use. When the netting is subsequently converted into the state of
30 use, the netting is shortened, whereas the tear-open thread 3 preserves its length and forms, between the transverse strands 6 receiving it, loops which are accessible from outside and can be grasped for tearing open.
- 35 Since the threads of the encasing netting are relatively thick, if only for visual reasons, the tearing open of the netting may necessitate considerable effort in spite of the fact that this is

made easier by virtue of the invention. There is less effort if the procedure according to fig. 5 is adopted. A loop 7 of the tear-open thread in the middle region of the sausage is suspended in a fixed hook 12 and thereafter the sausage grasped with both hands is moved vigorously in the direction of the arrow 13 first to one side and then to the other.